

Claim Amendment under 37 CFR 1.121(c)

1. - 4. (Previously cancelled)
- 5 5. (Currently amended) An identification method using a random type recognition object, comprising:
object wherein the random type recognition object having identification particles irregularly distributed within a
10 3D shape is completed;
a first recognition step wherein a positional value and a characteristic value on an orthogonal coordinate of the identification particles within the random type recognition object produced in the random type
15 recognition object-generating step are recognized from one or a number of directions on the orthogonal coordinate to complete a first data set;
a second recognition step wherein the positional value and the characteristic value on the orthogonal
20 coordinate of the identification particles distributed within the random type recognition object in which the first data set is completed in the first recognition step are recognized from one or a number of directions on the orthogonal coordinate to complete a second data set; and
25 a step of determining whether the random type recognition object is genuine by determining whether the first data set completed in the first recognition step and the second data set completed in the second recognition step are coincident with each other,
30 further comprising:
an eigen value-assigning step of assigning an eigen value to the first data set completed in the first

recognition step and storing the assigned eigen value;
and

an eigen value-extracting step of searching a first
data set coincident with the second data set completed in
5 the second recognition step and extracting the eigen
value assigned to the first data set whose data sets are
coincident with each other,

wherein the step of determining whether the random
type recognition object is genuine includes the step of
10 comparing the eigen value extracted in the eigen value-
extracting step with an eigen value that is already known
to determine whether the random type recognition object
is genuine.

15 6. (Canceled)

7. (Currently amended) A product authentication system
wherein a purchaser determines whether a purchased
product is genuine through a network, comprising: a
20 recognition apparatus for allowing the purchaser to
recognize a characteristic value from an recognition
object that is distributed together with a product in
order to determine whether the product is genuine; an
authentication database for storing a data of the
25 recognition object containing information on a product
inputted by a seller and an authentication-processing
result; and an authentication server connected to the
recognition apparatus through a network, wherein if the
purchaser transmits the data of the recognition object
30 recognized by the recognition apparatus through the
network in order to make requests for determining whether
the product purchased by the purchaser is genuine, the
authentication server compares the data of the
recognition object with the data stored in the

authentication database and then transmits information on a product coincident with the data of the recognition object,

- wherein the recognition object is a random type
5 recognition object in which identification particles are irregularly distributed within a 3D shape, and a positional value and a characteristic value of the identification particles distributed within the 3D shape are recognized from one or a plurality of directions by
10 means of the recognition apparatus, and
 wherein the recognition apparatus is a 3D identification apparatus and comprises: a random type recognition object having identification particles irregularly distributed within a 3D shape; and
15 recognition means for recognizing a positional value of the identification particles distributed in the random type recognition object from one or a plurality of directions on an orthogonal coordinate.

20 8. (Original) The product authentication system as claimed in claim 7, wherein the authentication server comprises:

a data receiving part that receives the data of the recognition object recognized by the recognition
25 apparatus, from the purchaser;

an authentication-processing unit that compares the data of the recognition object received from the data receiving part with the data stored in the authentication database to search information on a product coincident
30 with the data of the recognition object; and

a data transmitting part that transmits the information on the product searched by the authentication-processing unit to the purchaser.

9. (Original) The product authentication system as claimed in claim 8, further comprising a history management unit that has a history received from the data transmitting part stored in the authentication database.

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10. (Canceled)

11. (Canceled)

10 12. (Currently amended) A product authentication method in which a purchaser determines whether a purchased product is genuine through a network using an authentication system connected to the purchaser, comprising the steps of:

15 (a) generating a recognition object distributed together with the product so that the recognition object has a characteristic value;

(b) allowing a seller to recognize the characteristic value of the recognition object using a 20 recognition apparatus, assign information on the product to the recognition object, store the characteristic value held by the recognition object and the information on the product assigned to the recognition object and then input those information to the authentication system;

25 (c) allowing the purchaser to recognize the characteristic value from the recognition object distributed together with the product using the recognition apparatus in order to determine whether the purchased product is genuine;

30 (d) allowing the purchaser to transmit a data of the recognition object recognized by the recognition apparatus to the authentication system through the network in order to make requests for determining whether the product is genuine; and

- (e) allowing the authentication system to compare the data of the recognition object received through the network with the stored data to search information on the product coincident with the data of the recognition
- 5 object and then transmit the information on the product,
wherein the step (a) comprises generating a random type recognition object in which identification particles are irregularly distributed within a 3D shape, and a positional value and a characteristic value of the
- 10 identification particles distributed within the 3D shape are recognized from one or a plurality of directions by means of the recognition apparatus,
- wherein the step (b) comprises recognizing a positional value and a characteristic value of
- 15 identification particles within the random type recognition object produced in the step (a) from one or a plurality of directions on an orthogonal coordinate,
- wherein the step (c) comprises recognizing a positional value and a characteristic value of
- 20 identification particles within the random type recognition object produced in the step (a) from one or a plurality of directions on an orthogonal coordinate,
- wherein the recognition apparatus is a 3D identification apparatus and comprises: a random type
- 25 recognition object having identification particles irregularly distributed within a 3D shape; and recognition means for recognizing a positional value of the identification particles distributed in the random type recognition object from one or a plurality of
- 30 directions on an orthogonal coordinate.

13. (Original) The product authentication method as claimed in claim 12, further comprising the step of storing the transmitted history in the authentication

system.

14. (Original) The product authentication method as
claimed in claim 12, wherein the recognition object has
5 an index assigned thereto, and if the purchaser transmits
the data of the recognition object recognized by the
recognition apparatus and its index to the authentication
system through the network in order to make requests for
determining whether the purchased product is genuine, the
10 authentication system searches data of the recognition
object that is coincident with the index received through
the network to determine whether the searched data of the
recognition object and the data of the recognition object
received through the network are coincident with each
15 other and then transmits the determination result.

15. (Canceled)

16. (Canceled)

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17. (Canceled)

18. (Canceled)

25 19. (Original) The product authentication method as
claimed in claim 12, further comprises the step of
allowing a purchaser to pay the price of using the
authentication system.

30 20. (Previously added) A random type recognition object
for an identification apparatus, wherein identification
particles are irregularly distributed within a 3D shape,
and a positional value and a characteristic value of the
identification particles distributed within the 3D shape

are recognized from one or a plurality of directions by means of separate recognition means.

21. (Previously added) A 3D identification apparatus
5 using a random type recognition object, comprising:
 a random type recognition object having
 identification particles irregularly distributed within a
 3D shape; and
 recognition means for recognizing a positional value
10 of the identification particles distributed in the random
 type recognition object from one or a plurality of
 directions on an orthogonal coordinate,
 wherein the recognition means recognizes the
 positional value of the identification particles and a
15 characteristic value of the identification particles at
 the same time, and
 wherein the recognition means recognizes the
 positional value of the identification particles and a
 characteristic value of the identification particles at
20 the same time.

22. (Previously added) The 3D identification apparatus
as claimed in claim 21, wherein the recognition means is
an image recognition apparatus or a laser detector.

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23. (Canceled)

24. (Canceled)